AMERICAN JOURNAL OF OPTOMETRY

VOL. 9 OCTOBER, 1932 NO. 10

ON PRESCRIBING BIFOCALS FOR JUVENILE MYOPIC PATIENTS*

F. McFadden, Opt.D.
Rutland, Vt.

Myopia seems to be a somewhat controversial subject. Apparently some consider it purely an excess-accommodative condition, while others do not give this much weight, and there are also the middle-ground arguments. Differentiation of the two conditions gives us the terms: *axial* and *faculative*.

Tcherning says that myopia from near work appears usually at an age ranging from 6 to 15 years, often stopping at 25 years of age, and that it attains medium degrees and does not seem to exceed the limits of —9.00D. He also mentions what he terms "dangerous" myopia as developing in early infancy, sometimes increasing throughout life, and exceeding —9.00D. This later form is, in his opinion, to be considered as malignant choroiditis. He examined 7,523 young Danish conscripts, with the following results:

	Group I		
Students	32%	Myopes	
Office and trade	16%		
Artists, etc.	13%		
Tailors, shoemakers, etc.	12%		73%
	Group II		
Workmen at hard labor	5%		
Agriculturalists	2%		7%

He found 727 myopes of all degrees, or about 9.7%. Of those using their eyes for close work, of Group I, there were practically 10 times as many myopes as in Group II. Tcherning quotes Donders as saying: "I do not hesitate to declare every myopic eye a diseased eye," a phrase which he says Cohn adopted. They showed conclusively that

*Submitted for publication August 22, 1932.

myopia is more frequent and more pronounced in the higher classes of the schools. He further says that "in spite of the slight degree of accommodation which myopes need, the theory of the accommodative origin of it has many believers and I think they are right. Myopes often accommodate more than we think." He quotes Javal as saying that "a myopic eye may be focused at once for the extremities and the middle of the line of a book, that if the myopia is —10.00D, the length of the line being 10 cm, and if the ends of the line are seen distinctly with*out* accommodation, the patient is obliged to accommodate about 2.00D when reading in the middle, unless he keeps his book or head in continuous motion, or contents himself with seeing diffusedly a part of the line."

Tcherning says that "if the myopia is low, under three dioptres, we give correcting glasses for distant vision, and *nothing* for near vision" directing that the book be held not nearer than 33 cm. He proceeds: "if the myopia *exceeds* three dioptres we give for near vision correcting glasses diminished by 3.00D: for instance, if the myopia is —6.00D we give —3.00 for near vision.

May says that "in *low* degrees of myopia the patient may be allowed to read without glasses, while in high myopia the full correction is prescribed for distance, and about two-thirds for near work. He gives the data that if a patient required —10.00D for distance that +3.00D.Sph. should be added for near, or the value of —7.00D which will allow one to read without accommodation." He goes on to say that many myopes can wear strong lenses, representing full correction, constantly and with comfort, that others require two sets, one for distance, the weaker pair for reading. In all cases, however, we are warned that if the lenses are intended to correct the eyes for 33 cm, so that accommodation should not be brought into use, that the patient must be particular *not* to hold the work *nearer* than this distance, else accommodation will be invoked and the purpose largely defeated.

Nettleship states that any condition during childhood in which better vision is gained by holding objects very close is likely to bring on myopia, and that we find it disproportionately common among those who from childhood have astigmatism and other conditions which make seeing difficult. He further says that the full correcting glass for distance cannot safely be allowed in the higher degrees of myopia, since it diminishes the size of the retinal image so much that the patient is tempted to enlarge them again by bringing the object nearer; again, the accommodation is often defective in the higher degrees, and as the fully correcting lens requires full accommodation which leads to over-straining and weakening this function. He further states that a patient who has a myopia of —7.00D. should be given a near pair having 3.00D. less power, or —4.00D.

Enough has been quoted, therefore, from eminent and imposing authorities to show that the myope, particularly the juvenile myope,

should have his accommodative function very definitely relieved. While this can be done by two pairs of lenses, this is an imposition that we cannot even contemplate, if there is a better and more logical way. Few children, and fewer still of our self-conscious juvenile students, will accept grandmotherish "pasters" as bifocals, and be humiliated by the appellation of "four-eyes." Nothing short of invisible bifocals should be used.

This article is not intended to cover the subject of false, or apparent myopia. We are fully familiar with the various procedures whereby the true and the false types can be sifted and the definitely "axial" type determined. There is probably little doubt but that the external recti do press to some extent upon the posterior portion of the globes, and that when there is appreciable lengthening, this pressure is to some extent increased, and a tendency toward excessive exophoria induced. But we need to make no ritual in taking the measurements of this divergence, nor in determining upon a comfortable amount of "base-in." Nor will all the base-in we can prescribe in the least measure, reduce stephalomy, or true axial lengthening of the globe.

We might go on and divide up myopia into an almost infinite number of diverse types, based upon differences in amount, in corneal curvatures, and other apparent or real variations, and dwell at almost infinite length upon esophorias and exophorias the final result of which is of no importance. In these discussions relative to the use of bifocals for infantile and juvenile myopes, the writer has several times definitely stated that the involvement of the phoric and tropic problems, and the introduction or discussion of prismatic powers in combination, was left out of consideration, not because they were ignored, but because their mere suggestion only served to raise diverging discussion which tended to lead away from the real issue.

The facts we only too well know in our own experiences fully agree with the statements and data set forth by Tcherning. These show beyond reasonable doubt that myopia is an induced defect, that it readily and only too easily gravitates into a pathologic condition which is chronic, and from which there is no relief but the lifetime use of thick lenses. If we can detect this condition in its very earliest stages, not indeed when it has become two or three dioptres, but when it is fractional, and relieve the ocular strain, we shall go far along the road of relief of the symptom and the curtailment of the imminent defect. If a child is definitely showing even half a dioptre of axial myopia, without any reference to family history of the difficulty, we are remiss if we do not institute proper remedial measures. The mere application of prisms of minute or inconsequential amounts may sound well, but it is of no value.

Youngsters who hold their books at ten or eight inches, are calling up four and five dioptres of accommodation. If they can carry this load, hours unending without difficulty, well and good, but our schools show

that myopes appear in a ratio of something like one in ten to one in twenty. If tender eyes begin to adjust their focal plane to a further position which increasingly relieves the over-stressing of the accommodation, the result is myopia, and its practical relief is some optical arrangement which will do some of this focalizaton work without callng upon accommodation for all of it. One recent writer observed that it was "natural" to exert two, three, four dioptres of accommodation, that it called for no effort. All work is effort. No muscle can be stressed without putting forth energy. No muscle once stressed can be held under tension without putting forth still further energy. A sustained effort is far greater than a momentary effort and directly in proportion to the element of T, or time, during which the stress is maintained. If the effort of focalization for one second is t, that for sixty seconds is $60t$. If infantile and juvenile eyes are crowded to do a vast amount of work by focalization and they find that F, or focalization, must be accomplished by the effort of F x t x 60 seconds x 60 minutes x 3 hours (or more), F = 21,800t, we may logically look for some form of lazy relief. This may and does at times take the form of the attempt of the organ of sight to adapt itself to its work by changing the position of its focal plane, thus founding myopia.

Our logical remedy is to neutralize the known amount of myopia, and it is even practical in many cases, to go further and not merely "neutralize" the distant correction but also a part of the accommodative effort, as well. These observation cases should be held under close week-by-week and month-by-month control. A few weeks or months of close supervision, careful correction, giving definite assistance to a weakened faculty at a critical time, will often stop its increase, hold it stationary, and not infrequently allow nature to catch up the discrepancy between the dioptric length of the focal system and the dioptric length of the globe, establish an equilibrium, and eliminate the use of glasses. Only very early and attentive optometric work will succeed, however.

Those who would "develop the accommodation of juvenile myopes" by omitting plus segments, and allowing the victim to study through their distance correction could with equal logic even considerably increase the power of that lens. But while we are exceedingly careful in over-correction for distance we do this very thing for the more arduous task of study.

There is no use of becoming excited over the mere suggestion of bifocals for students. Very frequently, but by no means often enough, we prescribe for a hyperope a weak plus lens for distance with an add of a dioptre or two. These give great relief to those using their eyes for long hours at close range. No one objects to this procedure, least of all those who find this arrangement exceedingly satisfactory. This is done solely in the interests of relieving accommodation of the Focalization times Time (F x T), strain, where F may represent only a fraction of a dioptre of segmental power, in some instances. The underlying idea is

merely to have the segment do some of the mechanical work of the accommodative faculty.

The same motive underlies corrective measures for the low myope, that of relieving accommodation of some, much, or all, its over exertion while the tunics of the globe strengthen with age, the musculature grows stronger, and the need of focal relief gradually subsides. There isn't anything "new" in all this. It has been known and practiced for a great many years, and upon a great many people with highly satisfactory results. There seems an unaccountable prejudice in the minds of some to the effect that bifocals only can be given to "presbyopes." Would someone kindly define with scientific exactitude worthy of our present-day Optometry, just what "presbyopia" really IS? for it would be interesting to actually *know*. Yes, we know what the text books say, relative to some mystic number of years, but our books only tell us things supposed to have been found out in the long ago. "Old sight" actually begins with the shedding of the swaddling cloth, and becomes a factor in some cases in very tender years, while others go long past the deadline before becoming troublesome. We are as old as our arteries, our accommodation, or as some of our notions.

DR. F. McFADDEN,
MEADE BLDG.,
SUITE 35-36,
RUTLAND, VT.

THE EXTERNAL EXAMINATION*

J. O. Baxter, Sr., Opt.D.
New Bern, N. C.

The writer is fully convinced that many puzzling cases of eye discomfort that we have been prone to diagnose as asthenopia, and attempt to correct by refraction or myological treatment, are successfully diagnosed only by a careful external examination with a good binocular loupe.

Not infrequently small and large particles of foreign bodies, celia, mucous, wild growing celia scrubbing the cornea, mucous membrane and caruncle, chronic low grade conjunctivitis cyclitis, blepharitis corneal disease and iritis are found as the cause of the eye discomfort.

Owing to the great frequency of mild cases of conjunctivitis, which if overlooked spells disaster to the practitioner, especial attention should be paid to the blood vessels of the bulbar and palpebral conjunctiva.

In health very few blood vessels are evident in the conjunctiva, whereas in inflamation of this tissue many more are seen as well as enlargement of the calabre of its vascular system.

Occasionally, by careful inspection early arterio sclerosis may be observed by noting abrupt contraction of the blood stream in a vessel, due to closure of its lumen, or obstruction, or a beaded effect within the lumen.

Often the bulbar conjunctiva may give little evidence of inflamation, whereas by eversion of the lids definite congestion of the palpebral conjunctiva as well as granulations, foreign bodies, gritty concretions et cetera, all of which cause considerable irritation, and havoc to the doctor who mistakes such troubles for errors of refraction.

Senile patients are quite frequently annoyed by a low grade of chronic conjunctivitis. These patients occasionally are found with the tear ducts closed with accompanying epiphora. The inflamatory products of the conjunctivitis may account for often accompanying inflamation of the lid margin and loss of the cilia (Blepharitis).

It matters not how the Optometrist wishes to dispose of these cases. The fact remains that these patients will inevitably be lost to the practitioner who fails to properly—shall we say treat them!

*Submitted for publication August 20, 1932.

Case reports:

Mrs. D.'s eyes became quite irritated with a complaint of appearing dry, in spite of a copious flow of tears. A physician prescribed atropine for the supposed ciliary tenderness and a few other lotions, without results. Another doctor prescribed vaseline ointment to aid lubrication. Thus this patient suffered several weeks with increased irritation and congestion. She promptly recovered by removing a couple of eye lashes from deep within the upper culs-de-sac.

Mrs. L. suffered about a year with increasing blepharspasm and irritation with several changes of glasses, and was temporarily relieved by holding her finger over a certain pressure point of a division of the fifth nerve. This patient was benefited by removing a small celia that was growing deep into the folds of the mucous membrane of the lower fornix.

Another case was treated six months by his physician with various lotions unsuccessfully, until he referred the patient to the Optometrist, who found a most minute particle of steel dust imbedded upon the cornea, which had formed a rust stain thereon.

One other case had considerable congestion in the inner angle of the bulbar conjunctiva, was treated for episcleritis unsuccessfully, who recovered by removing a foreign body from this area of the eye.

DR. J. O. BAXTER, SR.,
NEW BERN, N. C.

ORTHOPTICS*

R. E. Littlefield, Opt. D., F. A. A. O.
Kansas City, Mo.

The oak tree is a fitting symbol of life and growth. The tiny acorn requires only time to become the mighty oak. If we watch it from day to day, we are sure to be disappointed. Today it looks much as it did yesterday or the day before; but ten years or a hundred years from now will justify our faith in its future.

So it is with optometry; optometry has the germ of life within its self, for it is rendering a service to humanity that is not equaled, in meeting the peculiar needs of the present day. Civilization's great need today is visual need; and optometry is the only profession qualified to meet these all important needs of civilization.

This is called the machine age, and it is truly so called. To cope with machinery, man must become machine like in the precision of his muscular reactions to mental impressions. This is so dependent upon vision that you are justified in saying, "You can do the job no better than you can see it."

The three important considerations in industry today, (1) quantity of production, (2) quality of production, and (3) safety of operation, are all dependent upon vision.

The large industries of the country are recognizing this and having visual surveys of their personnel; the worker is recognizing it and is seeking help in increasing numbers, for needs that may not be clearly defined in his own mind; the optometrist must recognize the need and prepare himself to meet it.

It is no longer sufficient that our examination enable us to write a prescription that gives our patient the best vision in each eye. This may have been enough in the day of the acorn, but this is the day of the mighty oak. Today we are talking of the minimum diagnostic outline, and unless these determinations are adequate to enable us to properly interpret the needs of our patients in the light of present day

*An abridgement of the material presented before the American Academy of Optometry at Omaha, December 16, 1930.

demands, we are coming far short of meeting our obligation to our patient or to our profession.

The importance of orthoptic training in the practice of optometry has been overlooked by the average optometrist until in recent years. There are some who for many years have been seeking to lead optometry in this direction with very meager results. In lagging behind this leadership we have lost to optometry those patients who could not be made comfortable with glasses alone. They were uncomfortable and they were seeking comfort and when they failed to find it from the optometrist they went elsewhere. That the oculist did not make them comfortable is beside the point. They have gone to him year after year and paid him good money for treatments that were not needed and that did not give comfort, but they felt that they were doing something.

When they find that optometry is able to give them relief there is no doubt as to their willingness to pay for it. The financial rewards for this type of service are unquestioned where it is handled on a proper basis. The broader field of service opened up to optometry by this type of work is in itself of utmost importance.

Perhaps the primary reason for the lack of widespread interest in this work has been the feeling on the part of most that it took a sort of super-intelligence to determine the patients' needs.

There has been such conflict in the teachings of those who were accepted as authorities, that by the time one had read several different authors there was complete mental confusion as to what it was all about. Today we are more fortunate in having these problems solved for us, or at least so nearly solved, that we need not lose our way over what was once an uncharted course.

If our diagnostic findings are adequate it should be a simple matter for us to determine the direction in which the patient needs help. While one should always recognize the possibility of pathological and systemic conditions contributing to binocular disturbances, we also realize that the patient will need our help in restoring innervational balance after these other conditions are cleared up or while they are in the process of being cleared up.

I believe that one may conservatively say that fifty per cent of our cases will be helped by giving them some treatment, and I believe that twenty-five per cent of them will never be completely comfortable without it.

The patient with an insufficiency of convergence cannot hope to be comfortable if any amount of close work is done. What constitutes insufficiency of convergence must be determined by a consideration of the various factors entering into the case. Such as: inter-pupillary width, refractive error, induction, phorias, amount of near work, environment, and so on.

To state dogmatically that this or that constitutes adequate con-

vergence power, or that this or that constitutes an insufficiency of convergence, is missing the mark completely. The amount that one person will find wholly adequate will be quite inadequate for another and regardless of induction the patient who is uncomfortable when doing close work should certainly be suspected of lack of co-ordination at that distance and the training given should be designed to correct this.

The man who is practicing in a city of any size where he is having office workers, shop workers, and others with a large amount of close work, perhaps high school and college students, there will be a number of this type of case and as the years pass and our civilization progresses, there will be more and more of them.

In esophoria, after determining the presence or absence of pathology, and if present, taking the necessary steps to its elimination, a course of treatments and treatment lenses should be followed before attempting a permanent prescription.

Some of my happiest results have been of this type, who have suffered from chronic headaches for fifteen to twenty years, and have been given complete and permanent relief by a series of prism base-in treatments and prism base-in incorporated in their correction.

When you find this condition in the busy, high powered executive who keeps himself keyed up to a high nervous pitch all day, subject to nervous headaches and insomnia, we will be able to give a large measure of relief immediately through this procedure.

A very opposite type that perhaps we will meet with more frequently, the anemic young woman, lacking in pep and vitality, perhaps orthophoric or slightly exophoric for distance, showing no lag of convergence at the near point, or perhaps esophoric at near, may show less than the expected amount of induction, and yet is made comfortable with base-in treatments, and perhaps with a small amount of prism base-in added to her correction temporarily.

We must always bear in mind that our aim and object is to increase motility and build toward balance in our binocular relationship. This is readily understood and appreciated in our tropias although we seem to lose our sense of proportion and balance in dealing with the phorias.

It is easily seen in exotropia that only base-out work can hope to be successful. While we may put base-in prisms on the patient in the treatment, in order to permit fusion, our treatment consists of attempting to reduce this with base-out prisms.

These cases respond amazingly to treatments and these unfortunate boys and girls and even men and women should find in the optometrist a friend who can restore to them, at least a normal looking pair of eyes, and in many cases, a truly normal pair of eyes.

Where the deviating eye is myopic, usually with good acuity with correction on, there is no problem involved in restoring fusion and

binocular functioning. In the case that is due to injury or amblyopia, the results may not be so happy or easily accomplished but as far as the patient is concerned, the important thing is a normal looking pair of eyes, and this we can give them.

In the past I have felt that a measure of vision was necessary in the deviating eye but I have had most amazing results with a case recently where the patient barely had vision to count fingers at sixteen inches and while there has been a slight improvement in vision since the work was begun, fusion, in the sense we know it, is quite impossible and yet the patient has regained complete control of the eye and can move it about as freely as she would move her hand.

With a series of treatments designed to create a brain habit of positioning the eye in the proper relationship with the other eye the patient finds that the eye stays straight without thought or effort on her part. I have been led to seriously question the need of much or any vision to straighten any deviating eye.

In convergent squint we only need to reverse our procedure and we find a ready response to our efforts. I do not think it is possible to classify our cases and take them through a cut and dried procedure that will always be effective in all of these cases, in giving us results.

I think one of the greatest sources of failure on the part of the optometrist who tries to do this type of work is in wanting a definite formula that will solve every case.

We would like to eliminate the ardorous task of thinking but you will find that every case must be worked out on its own merits. There are certain broad fundamental principles that will hold.

There is no need to hope for success in convergence insufficiency cases or in exotropias where base-in prisms are prescribed to be worn or made a part of the treatment, for of necessity this must make the case worse. Nor can we hope for success with our esophoric or our esotropic cases if we make base-out prisms a part of our prescription or our treatment.

Granting, of course, that base-out prisms are necessary to superimpose the images and permit fusion. This is not properly a part of the treatment.

The treatment consists of base-in prisms that tend to pull the eye out after fusion has been obtained. The steps necessary to obtain binocular brain attention and fusion of the images is another story and is one that must be written anew for each case.

One plan that I have found very helpful in getting brain attention to the picture in the deviating eye is to use a small light bulb as a fixation target at a distance as near as necessary to get the desired results.

Then with a card covering the fixing eye the light bulb will be seen with the deviating eye. Vision would have to be bad indeed

for the patient not to be able to see this. Then uncover the fixing eye and as the brain turns the fixing eye to the object under observation the deviating eye will be seen to turn away.

By placing the proper amount of prism in front of the eyes we can place the images on the macula of each eye so that as the fixing eye is uncovered the deviating eye does not move. I usually stop a little short of complete mechanical super-imposition of the images that a diplopia may be obtained when suspension does not take place in the deviating eye. After simultaneous brain attention has been obtained and the patient is able to hold it, more prism is added until fusion takes place.

If fusion is made and broken a few times you will find that an effort will be made to maintain it and more and more of the prism can be withdrawn. In some cases it may be advisable to put a red glass over the deviating eye as a check on the fusion. The tendency will be to suspend the picture on the deviating eye rather than to fuse it, and one must always work with the realization that one must out-think the patient.

With a card we can cover first one eye and then the other. They will see first a red light and then a white light and if we move it from one eye to the other and clear off, then cover right, then left, then off, making your movements first slow, then a little more rapid, and finally not hesitating over the eyes at all, we will find that it will be very difficult for the brain to maintain suspension on the deviating eye.

I do not think the occlusion of the fixing eye over long periods of time is a wise procedure in the majority of our cases. It will help us a little on some of our cases if it is used with discretion, but it is a very poor thing to lean upon completely as has been done for so many years.

I prefer to use the red glass, this time over the fixing eye as a part of their regular correction, and have the patient wear them constantly. In this way you make possible and desirable binocular functioning, for the brain can only obtain all the information wanted by using both pictures, whereas in occlusion, binocular use is impossible.

The use of the red glass on the fixing eye will also be of great value in building vision in the amblyopic eye. This was proposed several years ago by Dr. McCulloch and Dr. Peckham and I have used it since on many cases with great success.

Infallible formulas, techniques, and instrumentation has always been sought and has never been found. We buy an instrument that is advertised to straighten every pair of cross eyes and we try it on the first case that comes along and it doesn't work and we look for a new instrument.

We have always been able to find a new instrument and we always will be able to find one. We will find that the designers and the makers of these instruments will tell us that they are infallible.

The result is that we have a half dozen instruments all designed to do the same thing and none of them that we seem to be able to coax into doing it. As a matter of fact I believe that any one of these instruments used with intelligence would do almost as much as is claimed for it by the manufacturer.

This is a broad and liberal statement, for manufacturers do claim considerable, but I believe it is true. My personal experience is limited to the Kratometer and with the Kratometer I find that my results are in proportion to the thought and effort expended on the case.

No instrument will do our thinking for us and no case can be successfully diagnosed and treated without thought. Each case must be considered an unexplored country. An adequate diagnostic procedure, a comprehensive knowledge of eye functioning and what constitutes ocular balance with proper instrumentation gives us chart and compass that should keep us from losing our way.

If you are disappointed because I do not offer you a definite procedure to be followed in every case I would only remind you that a road map of Kansas would be of little value to you in Nebraska.

The states are very much alike in size and shape, but if no road map is available for Nebraska a chart and a compass and intelligence will help you far more in getting about over the state than a road map of Kansas would do for you.

Some vertical imbalance seems to be the usual accompaniment of lateral imbalance and quite logically as the eyes do not move in grooves either vertically or laterally. As a general proposition this needs to be given very little special attention, although I find it helpful to use the vertical prism bars in connection with other work, if very much vertical imbalance remains after the lateral condition approaches normal.

I am not attempting to cover the pathological indications which are always a possibility in binocular disturbances. I find a number of cases of vertical imbalance, perhaps caused primarily by pathology or injury, where treatment is indicated and successful.

I recall the case of a man fifty years old who five years previously had his head crushed in an elevator accident. He had a hyperphoria of considerable amount that frequently produced diplopia and had developed into an extreme case of head tilting. This patient was completely relieved and has remained comfortable for some three or four years by means of vertical prism treatments.

Another case of considerable interest was that of a young man twenty-five years old who had had an operation at the back of the eyeball to remove a growth that was pressing on the optic nerve. He had hypertropia of five degrees, perhaps caused by adhesions, and that he had sought relief from in many cities. When he came to me he was wearing a blank disc over the eye to prevent diplopia and was most uncomfortable and unhappy.

With the vertical prism treatment it was possible in a remarkably short time to pull the eye down into position and the patient has had no further trouble with his binocular functioning. He evinced considerable pain during the progress of the treatments and often times a quarter to a half degree of progress would be all that he would be able to endure.

However, all the ground we gained from day to day we were able to hold and he could move the eye that distance without further pain, which led me to believe that we must have been pulling loose some adhesions. It is hardly likely that we would continue to get pain in the muscle tissue itself each day after reaching the point where we had stopped the day before.

I think a certain amount of massage and manual manipulation is essential in all orthoptic work. Congestion, adhesions and poor circulation are all factors to be considered and can be materially helped in this way.

It is generally recognized that a brisk rub-down after strenuous exercise of any kind is helpful in preventing unwanted reactions, resulting in stiffness and soreness of the muscles and I believe one way to keep our patient from having a severe reaction from our treatment is by spending a few moments in stimulating the circulation, in as far as it is possible, through the tissues that have been exercised.

I look with favor upon any legitimate means of accomplishing this and do not hold with those who seek to limit too severely the practice of optometry.

Another type of case that should always be considered a treatment case is myopia. For myself I refuse to acccept a case of myopia on any other basis. I do not think it is possible to reduce the myopia in all cases but I do think it should always be tried, and if it is tried persistently enough and carried over a long enough period of time, many cases that seemed hopeless will begin showing a response. I have cases that for three or four years showed little or no improvement and that are now beginning to definitely respond to treatment.

One cannot avoid seeing the increasingly large number of young people wearing minus lenses. We see them on the street, on street cars and in public places. One is constantly coming in contact with this growing army of myopes.

It is our responsibility to attempt to stem the tide before our civilization is overwhelmed. We have not determined all the factors entering into this alarming condition.

Perhaps one of the underlying causes is the undoubtedly bad dietary habits of the nation. Refined and deviated foods making up the great bulk of our food intake, leaves the body deficient in many of the necessary elements for building tissue. As far as the eyes are concerned this results in a weakened structure that is not able to maintain its proper shape and myopia results.

Poor circulation perhaps is another factor, an insufficient amount of the necessary elements being carried to the structures. Another factor that must be given consideration is the increasingly large amount of near work being done. More and more are going through high school and college. More and more are finding tasks inside the office and shop.

The young man who is carrying a heavy course at high school or college finds that after a period of close application his distant vision is blurred. Perhaps he ignores it for a while but upon its getting worse, help is sought.

To put a pair of minus lenses on this patient and send him out of your office with no thought of doing anything further for him is verging close upon malpractice in these days of enlightment. The procedure on these cases has been covered so thoroughly by others that I have little to add.

I do believe that it is a wholly mistaken hypothesis to contend that crowding on the minus and forcing accommodation will stop the progress of the myopia through increasing the circulation. If poor circulation stood alone as the causative factor this might be helpful.

I do know that under-correction coupled with treatment will give the sought for increased circulation and will also unlock any accommodative-convergence spasm associated with the condition, immediately reducing the amount of the myopia. We must also give deep thought to diet and attempt to advise our patients along these lines.

DR. R. E. LITTLEFIELD,
617 BRYANT BLDG.,
KANSAS CITY, MO.

PRACTICAL IDEAS FROM A PRACTICAL STANDPOINT*

Clyde J. Hathaway, Opt. D., F. A. A. O.
Pontiac, Michigan

An idea, in itself, may be purely theoretical; it may be practical, or it can be a semi-combination of the two. The latter premise is dependent largely on how far logical conclusions are carried, and how practical the outcome. At its birth, and until such time as its practicability is assured, an idea must necessarily be considered theoretical.

I do not propose in this paper to discuss theoretical ideas or problems. To me, they are *not* theoretical; they long ago evolved into the practical. I am fully conscious, however, that to some, owing to previous thought, habit and practice; the major part of the ideas presented, will at first thought at least appear to be purely theoretical. Were I not thoroughly convinced of the value of these *ideas* having used some of them for better than twenty years in my daily practice; I would not have the courage to present them to this assembly. I know too well your status to brave your criticism and discussion.

Some, in fact most of these *ideas* or tests were a part of, and incorporated in the Case Review, which was presented for your consideration two years ago at Chicago.[1] I trust you will bear with me should I in part repeat what was then given. The principles involved, could not at that time in the paper presented be more than hinted at.

I will not attempt to present these tests in the order of their value for it might be difficult to differentiate, besides, it could be a subject for discussion, but in the order they logically come during an examination. As optometrists we are interested in any means or methods, that would aid us in making a satisfactory refraction. I use the term refraction advisably speaking of same in the larger sense, as being the ultimate conclusion—following one, or many examinations.

The number and order of the *ideas* I shall present, are as follows:

1. The Red Free Test.

---

*An abridgement of the material presented before the American Academy of Optometry at Omaha, December 15, 1930.

[1] A case of Esophoria and Pseudo Myopia corrected with Base-in treatments. C. J. Hathaway. American Journal of Optometry. Vol. 7, No. 10, p. 541. 1930.

2. The Plus 1.00 D. Check Test.
3. Ophthalmometric Readings.
4. Visual Acuity Through Dynamic Findings.
5. Vertical Displacement Test.
6. Circle-Diamond Test.
7. Graph.

Originality for all of these *ideas*, other than manner of use perhaps, is not necessarily claimed, however, I need not fear contradiction, I believe, in claiming discovery of the Plus 1.00 D. Check Test; the necessity of taking more than one Corneal Reading; the value of taking V. A. Through Dynamic Findings; and the Circle-Diamond Test.

The Red Free Test

It is a truism to state: "That it is just as necessary to fit the mind as it is the eye." It is just as true: "That we see with the brain and not the eye, etc.," yet, how often we fail to accomplish the former, and make no effort to prove the latter. We have in the *Red Free Test*—simple though it may be, the means to accomplish the things desired. For instance, equipped with a red letter or object (the writer uses the red letter of the Genothalmic Cabinet), we interpose the Red Free (green) glass before the right eye say, leaving the left uncovered. Ask if there is any change in the color of the red letter? If they say yes, it is black, quickly change over to the left eye. If there is an instantaneous response here also, you have positive proof not only of perfect fusion, but that both eyes are working together. Not necessarily with perfect harmony or with perfect comfort, however, that is another story, and not under discussion here. In a few well chosen words, you can easily prove that they do see with the brain and not alone with the eye, otherwise the brain would not interpret the image as black with each eye in turn. In fact it might not be black at all as one eye sees it black while the other sees it red. Where all is well, the brain must interpret the image as black or bronze, in spite of the fact the other eye sees it as red. Psychologically, the writer knows of no better test to prove the latter premise as given above, or a better means to gain the former.

Suppose, however, that while there is a perfect response over O. D., there is none whatsoever over O. S., or a very slow and partial change if any. This is valuable information. You know at the start there is poor teamwork between the eyes, with a low grade of fusion, if any. You will be on your guard in taking phorias and ductions. The right is quite apt to be the dominant eye, though it does not pay to jump at conclusions even here. Color blind people are discovered at the start.

Another use for the Red Free Glass is in taking the phoria, particularly in connection with amblyopia and suspenopsia. Vertical prisms give a black and red letter or object to align the one above the other. Still another and none the less valuable test for the Red Free, is in taking the ductions, especially the abduction. Place the Red Free lens before the eye that responds best if there is a difference, and when a red border begins to peep from under the black, you have the break-

ing point—when it disappears, the recovery. It is surprising how closely it tallies with that of any other method. Then, too, it is positive. Other uses will be found for this test by those who investigate.

The Plus 100 D. Check Test

My pet child, if I may be allowed to use the term, is this test. In the order of importance, this test should take first place. More can be learned from its use than from any other single test. It is the sentinel ever on guard to warn of impending danger; it is the pilot ever ready to pierce the fogs of uncertainty; it is the court of last resort to settle the discrepancies that arise. Substituting logic for rhetoric, let us see just how the above can be true. More than logic, however, is required to create light where darkness heretofore prevailed. Certain laws, such as *the acuity value of lenses*, if I may be allowed to coin the term, must be thoroughly understood, to enable one to command the services of this valuable agent.

Accepting the fogging value of the plus 1.00 D sphere as being approximately 20/70 (an emmetrope would be fogged back to that extent), it is further easily demonstrated and proven that a plus 2.00 D. sphere would fog back to 20/200.

Reverse the reasoning of the above, and it will be shown that a true myope of 20/200 V. A. will be brought to 20/70 with a minus 1.00 sphere. An additional minus 1.00 will give a V. A. of 20/20. This is exactly what will take place as the writer has demonstrated and proven times on end the past twenty-five years.

We will make the first use of this test at the beginning of the examination—just following the V. A. and Red Free tests. Run up a plus 1.00 O. U. in the phro-optometer, placing same before the naked eyes or before the glasses if worn. Call attention to the 20/70 line, explaining the while that you do not expect vision to be clear. Caution them not to strain, but to relax. If they start to read the line readily, quickly bring into view the 20/50 line—the 20/40 and so on up the chart not waiting for them to read the full line until they begin to stumble. To get accurate results, it is imperative that you have a Globe or a similar type of cabinet—if you do not happen to have a Clason, whereby rapid changes can be made of a single line of letters without changing the position of the line materially. Then, too, vertical doubling of the line can be made without confusion with other letters or objects. The reason will be obvious later. The writer has his Globe cabinet on top of the Genothalmic directly above, both used in connection with a mirror.

Suppose that 20/20 is read binocularly, you know at once that you have at least a 1.00 D. of hypermetropia to deal with if no glasses are worn. If over old glasses, an under correction if plus; an over correction if minus. The next step is to determine whether the eyes are balanced, e. g., refractively. This is where your single line of print comes in. Quickly throw up the vertical displacing prisms—6 degrees

is plenty. (In the older type of phro-optometer, have the regular 5 degree prisms of the Stevens' attachment exchanged for 3 degrees—3 up and 3 down, or 3 down and 3 up, as you prefer. This is preferable to a single 6 degree, as the displacement with the pair of 3 degree prisms is equal from the median line. Ten degrees gives too great a separation.) Now note if each line is equally blurred, and if so and both can be read, you may be reasonably sure that the eyes are well balanced refractively whether with naked eyes or over old glasses.

It will surprise you how often they will read say 20/20 with one eye, while with the other it will be anywhere from 20/30 to 20/200. Not very well balanced evidently. This applies in presbyopic patients also. You have already gotten the history of the case, complaints, discomforts, etc. To me anything like the above would be a pretty good clue as to the cause for the trouble. Findings such as the above should be recorded in space provided on your record card. It takes a long time to describe these tests—much longer by far than it takes to make them.

We will next make use of this test after the final prescription is tentatively found. V. A. monocularly and binocularly say, is 20/20 full. The patient perhaps has 20/20 vision without glasses. It being a plus correction, complaint is made that vision is not so clear with as without them. You can add a plus .50 D. Sph., O. U. and he can still read the 20/20 line dimly, so you are quite sure he is not over-corrected. Owing to other factors in the case you wish to correct as fully as possible, still you do not want to run the risk of losing the case by over correcting. Run in the plus 1.00 D. Sph., if 20/70 is all that can be read binocularly, you have a full correction. By this time, you should have all the data necessary, so your judgment would dictate as to whether the patient would stand for same or not. Should you decide to give it, inform him that it is but temporary, that you know it will blur, it is meant to. A patient will wear a correction of this kind indefinitely, where otherwise if they thought it final, would refuse positively to do so. Suppose, however, that instead of the plus 1.00 dimming back to 20/70, 20/50 or even 20/40 minus can be read, you have positive information the patient is *not* over-corrected, otherwise but 20/70 could be read. This fact can be demonstrated to them. Let me say right here, that I do not wish it to be understood that I always give the correction that a plus 1.00 dims back to 20/70. That would be folly. This test is a sort of measuring rod so to speak. Your patient may normally have 20/15 or even 20/10 vision, so it is obvious judgment must be used here as elsewhere. I will say, however, that it is the line that I endeavor to hew to so far as it is possible so to do, particularly in the fitting of bi-focals.

A still further use for this test is in connection with myopia, anisometropia, and amblyopia. The same principle as outlines above applies to the two former, so we need not dwell on them here. It is understood that in all cases, proper cylindric values when needed are in place. Amblyopia of any nature, of one or of both eyes, is worthy

of our best efforts. It is here that intelligent use of the plus 1.00 will prove of the utmost value. Take for instance the case where after the most painstaking methods, the very best vision obtainable is say 20/50. Apparently, it makes little difference whether subtractions, additions, or what not of spherical power, be tried, the patient can see equally well with any or none of them. To use a slang phrase, "You are up against it." Here this plus 1.00 D. check test will again help. Simply fog back to 20/100 or 20/150—slowly and equally clear to 20/70 full, and you have with the plus 1.00 deducted, that correction which places the focus upon the retina, whether it be capable of interpreting it as 20/20 or not. In other words, you have the ideal prescription for the time being at least, with all guess work eliminated. I need not bore you further along this line, though the possibilities are not exhausted by any means.

Ophthalmometric Readings

Until quite recently, in fact far too prevalent even now, it has been, and still is, the custom with most practitioners, to use the opthalmometer but once, even though several examinations are made. In the light of present day discoveries and knowledge, such practices cannot be too severely criticised. It may be news to some, that the cornea can, and often does change its curvature, its dioptric reading, covering a space of time. I do not mean years, such as the gradual changing over or the elimination of astigmia here, but rather a more rapid change, an unstable condition so to speak. This is particularly true of astigmatic values after being partially or fully corrected. Those who have *never* made it a practice to take more than the one reading, will have the surprise of their lives when they do. The arrogant self-complacent attitude of *"the retinoscope only kind"* will be due for a severe jolt also.

The writer has done considerable research work along this line over a period of more than ten years, so believe he is in a position to state: *That astigmia as such, should not be considered as positive in amount, only, and until, such time, as consistent corneal readings are obtained.* What is meant by *consistent,* is the time when no further material changes in corneal curves are noted. Further, *that fan and clock dials as a means to determine astigmatic values, should be forever relegated to the scrap heap.* The writer discarded his years ago, long before he discovered the unstable quality of corneal curves. To justify the use of said cards, the argument is advanced and the question asked, "What is to be done with lenticular astigmatism?" It is a timely question and well put. I will hazard the statement, that were corneal curves more stable, *apparent* lenticular astigmia would be far less prevalent. We would not be attempting to correct a corneal error, or for that matter a lenticular error either that did not exist, not until at least we had ample proof that it did exist.

Let us for the the time being forget the possibility of a changeable dioptric reading of the cornea, and consider the matter so far as the use of fan and clock dials are concerned alone. Corneal curves we will say are positive. Why then should tests with said cards be unreliable?

We all have evidence of patients reading 20/20 when the ophthalmometer shows a difference in curvature of from 1.00 to 2.00 D. Let me ask, how can any normal, vigorous individual attain a V. A. of 20/20 when he has a positive corneal error of 1.00 even, if he does not compensate for it by acquiring for the time being at least a like amount of lenticular astigmia of the opposite axis? Does it stand to reason that all of the acquired astigmia will *always* disappear at a command? Dissolve itself immediately? Bear in mind that so far as innervation is concerned, *eye* muscles are *no* different than any other muscle of the body. It is absurd to even think it, let alone trying to correct an error on the strength of the hypothesis. This is what you are doing when you rely on what should be obsolete methods—the use of fan and clock dial cards.

The writer is not alone in his belief—*that true lenticular astigmatism, save in pathological cases, is non-existent, therefore should be disregarded.* When the need for *more than one* corneal reading is appreciated and understood, the bugbear of lenticular astigmia will have lost its terrors.

In the light of the above reasoning, it is obvious, there can be no harmony between the findings of the clock dial and of that of the ophthalmometer, so why try to place the blame on the crystalline lens? First, find the consistent curves of the cornea. This will take some time, at least a week, more often a month or even longer in some cases, but you will be handling the case properly. I hear someone say: "Yes, keep them coming to get more money." Yes, and I say it without blushing, if it is necessary to make a greater charge to do the work properly, for you will be saving the patient not only suffering perhaps, but many times money, too, through the necessity of consulting someone else to gain relief. The final prescription given may, in fact will, vary considerable more often than not, from that found at the first examination. If you have doubts as to the truth of the above, all I have to say is, try it and see. I have no fear of your ultimate verdict if you are honest with yourself.

I do not propose in this paper to discuss specific cases. Time will not permit. Suffice it to state, that a variation of 1.00 D. in one or both eyes is not uncommon, while a variation between the two eyes of even more is not impossible by any means. Do not ask me to explain the why, for I will not attempt it, though I might have some theories relative to same. Understand, theories as such, have no place in this paper. I would respectfully suggest while passing, that this might be a worthy subject for research at Columbia owing to the interest the Academy has there. Accepting the truth of the possibilities as outlined above, some of our failures in the face of a *perfect refraction,* may be explained. Too, a more charitable attitude toward a fellow practitioner is bound to come about.

Visual Acuity Through Dynamic Findings

Perhaps no refractive subject has caused the "burning of the midnight oil" to such an extent as Dynamic Retinoscopy. It has been

eulogized, it has been damned. The methods used are many, yet apparently no two practitioners arrive at precisely the same conclusions, or agree exactly as to the results. Where smoke abounds, there usually is fire. Surely there must be merit in the procedure, notwithstanding many to the contrary.

Personally, I use nothing but dynamic and that at 15 inches. It is my privilege so to do, the same as it is yours to make the test at several distances, or none at all. I merely wish to emphasize the fact that I do use and value the test. The thought occurs to the writer that such discrepancies in reason and in results among the members of the profession would not be so great if visual acuity was habitually taken through the dynamic findings. By so doing, there would be a standard whereby one could not only check against himself, but with one another. As it now is Dr. X, say, finds by his method a plus 2.00 D; Dr. Z, plus 1.75, while Dr. Y uncovers a plus 2.25, all working on the same patient. What is wrong? Nothing, it is but the technique. Dr. X worked to neutrality, Dr. Z to a slight with motion, while Dr. Y to a slight reversal. Shall we condemn the test because three men fail to agree? Certainly not. Had the V. A. been taken by each in turn, it would have been demonstrated there was no discrepancy. Let us say the patient was about 44 years of age. She would be presbyopic to the extent of approximately 1.00 D. Dr. X would find the patient would read with his findings, plus 2.00, 20/70. Dr. Z with the plus 1.75. 20/50. Dr. Y with the plus, 2.25, about 20/100. Making your deductions according to the value of the plus 1.00, would result in each case, a 1.00 D. of Hypermetropia. Simple, is it not? There is nothing complicated about it; any optometric student should be taught the acuity value of lenses at the start of their optometric training, but so far, I have yet to find a single one with whom I have come in contact who knows it on graduation if they depend on the instructors to teach it to them. If one knows the expected norm of any combination of lenses, or rather an approximate V. A., one readly recognizes a deviation from same, so is ever on his guard.

We have been wrangling over the value of dynamic findings for years, simply because we have no *standard* by which to measure and compare. Just so soon as we begin to record the V. A. through our retinoscope findings, whether it be static, dynamic, 20, 40, or what not inches, then, and not until will there be harmony, or records be interchangeable. That is, a finding by one practitioner be of the same value as that of another. 20/20, 20/70, or 20/100 should have the same value in New York, Chicago, or San Francisco.

Still another reason, but none the less valuable for taking the V. A. through your instrument findings, is to know whether it is the same for both eyes. The V. A. should be practically the same when the reflex is equally clear, regardless of the refractive condition. Anisometropic cases, unless complicated by amblyopia of more than 20/70 of one eye of young people, and 20/100 of those of 50 years of age or older, should show approximately the same V. A. for each eye.

Should this not be so, there is something wrong with your technique. This is a valuable check upon your work. When in my own practice I find a considerable difference, I want to know the reason why. Usually I have been careless, so I recheck immediately to discover the discrepancy. I have nothing to fear—in fact find my work comparatively easy when the V. A. is the same. This should be so, regardless of any degree of difference in sphere, cylinder, or both.

Not all the possibilities of valuable information to be gained through taking the V. A. through the dynamic findings has been covered in the above as you shall see. Considerable can be learned as to the muscular and innervational habits of your patient too. Take the patient for instance who has reached the age of 50, who has a manifest error of at least 1.00 D. of hypermetropia, yet has never used a glass even for reading. To be true, he has refrained from reading much at night as he will tell you, and habitually holds his paper some distance away. He still insists that his vision is just as good for distance as it ever was. What will your dynamic retinoscope show at 15 inches, and what will the V. A. be? Usually you will be able to uncover but 1.50, not over a 2.00 at the most, unless you resort to base-in prisms, when perhaps 2.50 will show up. Your V. A. through the first finding plus 1.50 will be a hazy 20/20, and if the second plus 2.00, 20/70. What does this prove? It is a positive indication of a disturbance of the convergence-accommodation function. Take note of the condition of the forehead, which, if you had observed when taking the history of the case, not only would be deeply furrowed horizontally, but would have deep grooves vertically also. While it is possible an esophoria of from 1 to 3 P. D. naked vision, may be in evidence, the writer will stake his reputation there is a real exophoria present. This will show up in the high, or relatively high abduction for distance, at least 8/7.

The true significance of the case however, does not lie in the eso, exo, abduction, etc., but does show up in the V. A. The other conditions are but by-products so far as this test is concerned, though the root of the whole matter is the imbalance caused by a weak convergence. Let us see what would have shown up had the patient been orthophoric, and had been wearing at least distant glasses for some time. In the first place the dynamic findings at 15 inches would have been a plus 3.00 D., O. U. with a V. A. of 20/200. He is 1.00 D. hypermetropic with a presbyopia of 2.00 D., therefore he should not read above 20/200. However, the V. A., as stated above, was anywhere from 20/20 to 20/70, showing on the face of it abnormal reaction. You may or may not care to know the age of the patient, but I am frank to say that I do. Try to get by in a case like the above by fitting a bifocal right off the bat and see how you will come out. Will they wear them with comfort? I say not. Bifocals should *never* be fitted to such a one until distant glasses are worn long enough through gradual changes to bring about a proper balance between convergence and accommodation. A well balanced pair of bifocals cannot be fitted and worn with comfort otherwise. It is due to conditions such as the one cited above

that account for the *many* cases fitted with too weak upper and too strong segs. Yes, V. A., through dynamic findings, particularly at 15 inches, in invaluable.

Vertical Displacement Test

The vertical displacement test is not new, save perhaps in the manner of its use. Instant comparison of the V. A. is possible at any stage of the refraction, without occluding one eye. Where one eye has been occluded even for a very short time, a correct reading of the V. A. of that eye is not immediately possible. It takes longer than one is in the habit of waiting generally, to get a correct reading. One might better accomplish the occluding of one eye by using a plus sphere. A plus 1.00 to plus 2.00 will generally do the trick, as you have a value of 20/70 to 20/200 and when same is switched to the opposite eye, instant response is had from the one uncovered. Eyes can be quickly balanced, however, through the use of the displacement test. In dealing with amblyopia, oftentimes the poorer eye is induced to do better through the help of the other.

Our greatest help through the use of this test, is in the fitting of cylinders where one or both have a tendency toward, or are actually off axis. We must bear in mind that many of our instruments, particularly the ophthalmometer, is monocular. Where one eye is occluded, there is no particular reason why an eye should not rotate on its antero-posterior axis should it be so inclined and innervated. I am always suspicious of slightly off axis prescriptions, particularly if it be of one eye only, or if both diverge outward at the top. They will bear close observation, and here is where the displacement test is invaluable. The binocular urge is still present, though we have a monocular check on each eye in turn. Any tendency to rotate is therefore checked. A great deal of discomfort can be spared our patients through the use of this simple test. The change made in the Stevens' attachment as mentioned at the beginning of the paper, is well worthwhile for its use is often, all through an examination.

The Circle-Diamond Test

The F. L. devotee should be interested in the Circle-Diamond test. No great thought is necessary to make this apparent. In the Kratometer F-L particularly, you have the squared blocks above and below the letters, which cannot help but aid in fusion, both vertically and horizontally. In a strictly fusion test, this is as it should be. I believe, however, we should know more about the habits of our patients, his innervational habits for instance.

Given the Circle-Diamond or any other like target, there is no incentive for fusion. The eyes therefore will assume that position which is normal according to the innervational-impulse generated at that particular time, and under conditions present. Vertical tendencies are quickly and accurately measured. True, they may be due if present as they often are to focal infection, but you have the information nevertheless. Vertical ductions may or may not prove their importance, but the point I wish to make clear is, it is folly to waste time on vertical

ductions and tests when the circle is perfectly aligned vertically with the diamond. *There can be no hyperphoria* under these conditions, vertical ductions or tests to the contrary. It is a time saver if nothing else. It is assumed the test is made at the usual 35 C. M. distance.

You will find that according to the average, but 5 P. D. base-out O. U. rather than the 10 is all that is required to bring the circle to center of the diamond, so make your deductions accordingly. For instance, suppose the full 20 is required, it is quite evident there is an over innervation to the interni. It is equally obvious, that a reduction to zero shows an under innervation. Suspension of vision of one or of both eyes is quickly apparent to the patient, by the disappearance of either target. Being unlike, this is at once spoken of by the patient. This is not so apparent with the conventional F. L. An E is easily imagined even though it is not perfectly clear. Irregular innervational flow shows up through a more or less unstable fixation, a back and forward movement of the targets. The size of the targets can be gotten from those used with the Worth amblyoscope, spaced 70 m/m apart if used with Kratometer.

Graph (p. 376)

The *ideas* in the form of tests as outlined above, have one and all a bearing on a *perfect refraction*. They do not, however, comprise *all* of such refraction. It is quite apparent, too, that the writer does not advocate, neither does he practice, save in exceptional cases, a completion of his work at one sitting. It matters not as to the classification of the method used whether it be tentative, treatment, or what not; any method used should rightfully be of a *progressive* nature. The writer has been pleased to call the method he has used for better than twenty years, *progressive treatment*. Instead of its being a T. M., it is a P. T., if anyone knows what that means. We know it gets results and that is what we are after.

Whatever the nature of treatment, method, or what not of a follow-up system, there must be some simple, easily comprehended record kept. This record should at a glance show what has been done, what progress made. Comparison of any finding with that of a like finding of another date should be apparent at any stage. It is obvious that all tests to be of value, must be made *always* under like conditions, whether they be made daily, weekly, or years apart. To accomplish this one should have a perfected technique. In the *graph* (see figure 1), this is possible.

The graph is not too technical, neither does it require much space. It can be added to, or reduced according to the case in hand. For instance, a column can be added for hyperphoria cases where they exist, while those of a myopic nature, if desired, the adduction column can be eliminated. In other words, it is flexible. No matter what your usual technique or procedure might be relative to a first examination, the graph being solely and only for additional follow-up work, lends itself nicely to any system of technique. In other words, it does not

Graph

#	Date	Pho	AB	AD	+1.00	Phy Exo	AB	AD	℞ Given – other data, etc.	Cash		Bal.	

Note:–
All checks made over
℞ as previously given.

interfere with, or complicate in any way your usual records. On the other hand, owing to manner of tabulation, etc., it simplifies the recording of additional data, gained through supplementary examinations. All data is easily and quickly analyzed at a glance.

You may, or may not, agree with the writer, as to the necessity of making more than one examination, save perhaps in what one might consider exceptional cases. If you do not feel the need, therefore do not practice the acquiring of additional data before writing the final prescription, the graph would have no place in your procedure. However, granting the possibility of material changes in dioptric astigmatic values of the cornea, if for no other reason, it should be obvious therefore, no matter how exhaustive the technique; a prescription given, could, yes, would, be subject to serious discrepancies, when such changes do occur, no matter how perfect the correction when made. The whole premise is based on the declaration that such changes *do* occur. This is no idle statement as records made by the writer covering a period of ten years will attest.

The writer's criticism of all, or of any technique, method, or procedure, particularly if the resultant findings contain an astigmatic value, is in the writing of a final prescription based on the data so gained. I am fully conscious of what that statement implies. You say, why not, prescriptions are written, thousands of them every day based on data that is nothing compared to a complete survey of all the factors involved? True. At one time the town barber was the surgeon, the doctor the tooth puller, but we have progressed a long, long way from that today. It is equally true, that if we wish to continue to merit the confidence and patronage of the public, we, too, must progress.

We must be willing to at least give the matter a hearing, especially when the assumption is not based on theory but on actual experience. The point I wish to make clear is, we *must*, in the average case, have data other than what is found at the first examination, to write a final successful prescription. One must have data covering several examinations perhaps, so co-related in a graph that is easily and quickly analyzed not only by the one who made it, but by anyone capable to do so.

Quite often one is pressed for time and not able to go through with a complete examination. It is here that the graph is especially valuable. On the start one need not get but the essentials such as the V. A., phorias, ductions, plus 1.00 check test, V. A. through dynamic findings, corneal readings, rough subjective, etc., which can be done in but a very few minutes. At the next appointment your usual technique can be completed, and at the same time comparisons made of the data gained before by rechecking, this data entered on the graph. Personally, I prefer to get all the data possible at the first sitting, but it is not at all necessary in follow-up work.

The graph is to the optometrist what the clinical record is to the physician. The writer perhaps is laying himself open to the same type of criticism that he has himself used in presenting these *ideas*, par-

ticularly the graph. You must admit if you study the various tests discussed, that they are based on sound reasoning, that they are workable and understandable, hence, of value to anyone who will take the time to put them to practical use. The graph, too, is not complex. Perhaps its need is not even yet apparent. Let me illustrate. A phoria in itself is of little moment, neither is a duction, but a changeable phoria, a change in duction power influenced by time, corrections given, etc., *is* of value, hence, the need of something that will give at a glance a mental picture so to speak of what is taking place. A graph of some kind is imperative. Not necessarily the graph submitted, that is but a gesture, an idea, something on which to build. Perfection comes only through evolutionary processes, therefore perfection in graphs will result through the aid of a more able mind than the writer's. Simplicity in the extreme was the thought in mind.

Conclusion

I have discussed several tests, a few out of the many that may, or may not be made in making a refraction. If more than one examination is contemplated and made, a technique should be developed which is easily and quickly followed. The graph submitted is not only a guide from one test to another, each following in logical order, but the data recorded directly under that of the previous examination can be interpreted or analyzed as a whole. The entire check can be made in but a few minutes, five to ten in the average case. You will notice that each subsequent examination or recheck rather, is *always* made over the correction as previously given, over the glasses as worn. Glasses are then removed and other tests made, such as corneal readings, etc.

I was greatly disappointed that in publishing the Case Review given two years ago, the graph was left out as drawn. Its value was largely lost, as one cannot get a mental picture of same simply by reading about it column by column. It might appear from the length of this paper, the time consumed in discussing the different subjects, etc., that to follow out a routine technique as outlined in the graph, would be too time consuming to be practical. Such is not the case however. Not all of the tests as outlined above are given at each examination, only such as are vital to the case in hand. Phorias, ductions (abductions particularly), plus 1.00 check test, phy. exophoria, and ductions for near being the essentials. The time saved in record keeping alone in the follow-up cases more than compensates for the trouble taken. Nothing of value is missed through having a technique always followed in the same way, and under the same condition, whether it be tomorrow, next week, a month, a year, or several years.

DR. CLYDE J. HATHAWAY,
813 PONTIAC BANK BLDG.,
PONTIAC, MICH.

AMERICAN JOURNAL OF OPTOMETRY

VOL. 9 OCTOBER, 1932 NO. 10

EDITORS

DR. CAREL C. KOCH
1501 Foshay Tower
821 Marquette Avenue
Minneapolis, Minn.

DR. JACK I. KURTZ
1501 Foshay Tower
821 Marquette Avenue
Minneapolis, Minn.

Original papers, scientific communications, clinical reports, society proceedings, books for review, and correspondence should be sent to the Editor, Dr. Carel C. Koch.

Annual Subscription, $3.00 in Advance, Canada and Foreign, $4.00.
Single Copies, 40c.

Copy of advertisements must be sent in by the tenth of the month preceding their appearance. Subscriptions, applications for single copies, communications with reference to advertising or other business should be addressed to the Business Manager, Dr. Jack I. Kurtz, 1501 Foshay Tower, Minneapolis, Minn.

Published Monthly by the
American Journal of Optometry Publishing Association.

The Journal has no objection to the reprinting by other magazines of any of its articles, provided such reprints are properly credited to the American Journal of Optometry.

ON THE USE OF VISIBLE LIGHT IN THE TREATMENT OF CATARACT

Authorities seem to disagree as to the exact cause of cataract. Among other causes, some believe that ultra violet radiation is a contributing factor, while others again contend that the infra-red radiation is the disturbing element. Many experiments have been carried out with varying results. Luckish[1] claims that the cornea of the human eye is opaque to wave lengths shorter than 2,950 A. U. and that it but slightly absorbs radiations between 2,950 A. U. and 3,150 A. U. and that it is quite transparent to radiations of longer the wave lengths between 3,150 A. U. and 7,800 A. U. The lens of the adult human eye is opaque to radiations shorter than 3,760 A. U. and usually to all ultra violet radiations. The lens of a child's eye will transmit slightly between 3,150 A. U. and 3,300 A. U. In discussing this subject, Sheard[2] states that the extent of our knowledge of the influence of radiant energy of specific kinds and amounts upon the human eye and hence indirectly upon the comfort and efficiency of human beings is as yet very limited. We have, for example, two rather divergent and apparently conflicting

ideas as to the influence of radiant energy as a causative element in the production of cataract. Both of these views may be found to be comparable, however, either the infra-red or the ultra violet may superinduce cataract under certain physiologic conditions of which we are, as yet, quite in the dark. It is this knowledge of physiologic conditions and of the physiological reactions that light of various wave lengths produces, which we in large measure lack. Some of the earliest work done on the relation of radiant energy and the eye was carried out by Schantz and Stockhausen, who concluded that the ultra violet is injurious to human vision and to the ocular organism by virtue of the fact that certain of the shorter wave lengths known as ultra violet (roughly, those below 4,000 Angstrom units, which is taken as the limit of the visual violet of the spectrum) are transmitted by the cornea and are absorbed by the lens, causing the lens to fluoresce. This flourescence interferes with the sharpness of the vision and hence causes a constant lenticular irritation whereby the lens repeatedly endeavors to sharpen the vision by slight changes of focus.

Hoffman[3], on the other hand, maintains that ultra violet radiation will not cause any injurious effect. In support of this statement, he furnishes the following proof: Over 1,000 cases have been treated with ultra violet light and kept under observation for a period of more than ten years and not one case of cataract was detected. W. E. Burge found by actual experimentation that the lens of an eye was still transparent after one hundred consecutive hours' exposure to actinic rays from a quartz lamp. He thus proved that these rays will not destroy the transparency of the lens within any reasonable length of time.

Many other theories and hypothesis have been advanced to explain the cause of cataract but so far there seems to be little or no proof offered which would establish any one above all other theories. And, while we do not know the exact cause of cataract, attempts are being made by medical refractionists, as well as by optometrists, to effect a remedy. Ryer[4] and Hotaling[5], Melvin[6] and Koch[7] suggest the use of Calobar lenses, thus filtering out both ultra violet and infra-red light, and allowing, therefore, only the visible part of the spectrum to enter the eye. That visible light of the spectrum has a therapeutic value is contended by many investigators, particularly by Kellog[8], Plank[9], Spitler[10] and other investigators who uphold these views.

Being interested in the treatment of cataract, I tried to approach this subject from a different standpoint, that is, by applying directly visible light of different parts of the spectrum and note the effects if any. The chief difficulty one encounters in clinical research of this type is to get the proper human material to experiment on because of this obstacle the number of cases one can use are necessarily limited. The writer has to date worked upon four cases. In one we were able to improve the vision in the affected eye from 20/100— to 20/30—. In two other cases whose visual acuity was still 20/30+, we were able to

keep the condition from getting worse, and in the fourth case the results were not very encouraging. Because of the fact that the cataract was already advanced and visual acuity considerably reduced in the first and last cases, we will try to describe the steps of our treatment in detail in order to show the progress made.

Case No. 1. Mr. C. A. Farmer, age 66, called for an examination on August 7, 1931. The patient was operated on for cataract of the left eye in 1926. The operation was not successful, and while he could get 20/70 vision with a +10.00 D. S., he could not make any use of the left eye because of the fact that he was subject to terrific pains and dizzy spells each time he attempted to use this eye. The surgeon who operated, as well as a number of other optometrists (medical and non-medical) tried every thing possible during the last five years, but in the end all attempts were given up. An opaque lens was fitted over the operated eye. This occlusion was the only thing that gave him relief. The vision in his right eye was about normal at the time of the operation and remained that way for the next two years. Then, he claims, the sight of the right eye began to fail. He visited several ophthalmologists during the course of the last three years and some prescribed glasses for him, while others again advised an operation as soon as the cataract became ripe. With his experience of the operation on the left eye, he was determined not to undergo another operation on the right eye. He was willing to try anything else. In our treatment, we used a lamp with special impregnated carbons as a source of energy rich in the particular wave band we wish to use, and filters which enable us to supply the 6,500 A. U. band of the spectrum and the 5,500 A. U. band. We first started treatment on August 13th. The lenticular opacity in the right eye was then rather large and dense. It was impossible to make an ophthalmoscopic or skiascopic examination. His visual acuity was 20/200 and with a —1.50 D. S. his acuity was 20/100—. We will present the record of the daily treatments showing in detail the type and duration of treatment used each day the visual acuity before and after the treatments. See chart, page 383. From a study of the accompanying data and curves in Figure I, some interesting facts can be observed. During the first four treatment days, while No. 6500 A. U. band was used, there was no improvement in vision before or after the treatment. The sudden great improvement in the visual acuity after treatment on the fourth day was due to the fact that the patient turned his head to the left and backward and was, therefore, able to see letters through the right lower quadrant of the cornea not obstructed by the opacity. Once discovered, this was guarded against during the future tests. After the fourth treatment, a different band of the spectrum was introduced, namely the 5500 A. U. band. This was alternated daily with the 6500 A. U. band and the visual acuity was taken daily before and after the treatment. It is interesting to note that there was a considerable daily improvement in vision after the first treatment with this

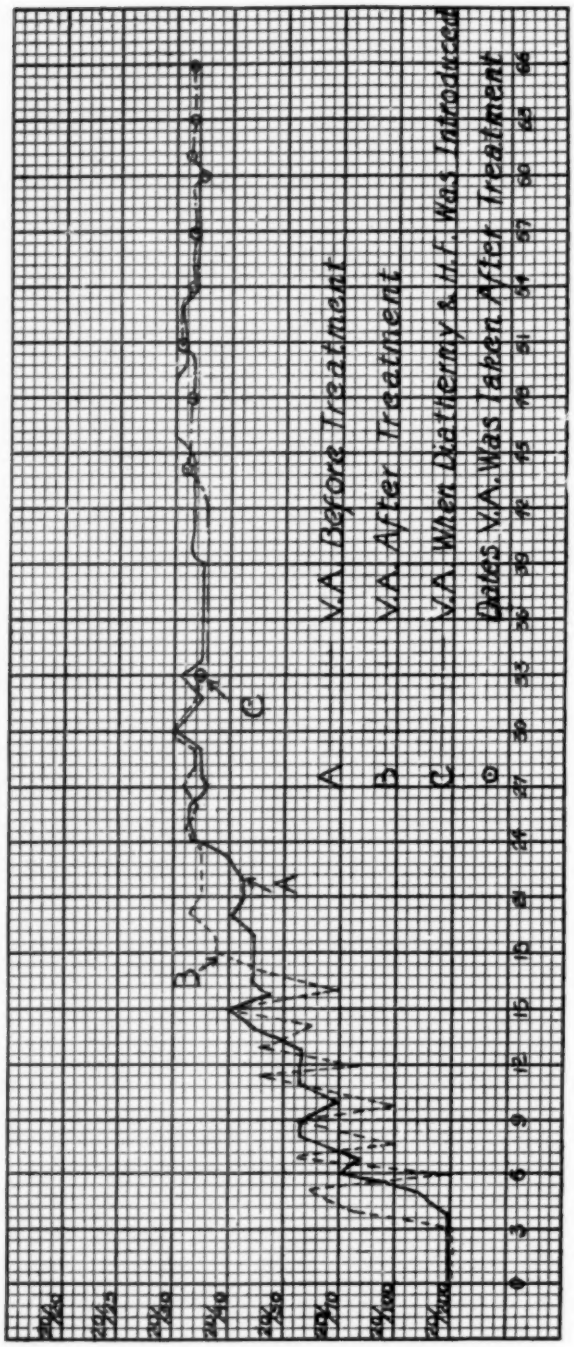

V.A. Before Treatment
V.A. After Treatment
V.A. When Diathermy & H.F. Was Introduced
Dates V.A. Was Taken After Treatment
A
B
C
D
1
3
6
9
12
15
18
21
24
27
30
33
36
39
42
45
48
51
54
57
60
63
66

Figure No. 1

TREATMENT CHART

Treatment Number	V. A. Before Treatment	Light Band Used or Type of Current	Modality Used	Time Treatment	V. A. After Treatment
1	20/200	6500 A. U.	.....	7 Min.	20/200
2	20/200	6500 A. U.	.....	7 Min.	20/200
3	20/200	6500 A. U.	.....	7 Min.	20/200
4	20/200	6500 A. U.	.....	7 Min.	20/ 70—1
5	20/100—	5500 A. U.	.....	7 Min.	20/ 50—2
6	20/ 70	6500 A. U.	.....	10 Min.	20/200
7	20/ 70—1	5500 A. U.	.....	10 Min.	20/ 50—1
8	20/ 50—1	6500 A. U.	.....	10 Min.	20/100
9	20/ 50—1	5500 A. U.	.....	10 Min.	20/ 50—1
10	20/ 70	6500 A. U.	.....	10 Min.	20/100
11	20/ 50—1	5500 A. U.	.....	10 Min.	20/ 50+2
12	20/ 50—1	6500 A. U.	.....	10 Min.	20/ 70—1
13	20/ 50—1	5500 A. U.	.....	10 Min.	20/ 50+2
14	20/ 40—2	6500 A. U.	.....	10 Min.	20/ 50—2
15	20/ 40	5500 A. U.	.....	10 Min.	20/ 40—
16	20/ 50+1	6500 A. U.	.....	10 Min.	20/ 70
17	20/ 40—2	5500 A. U.	.....	10 Min.	20/ 40—2
18	20/ 40—2	5500 A. U.	.....	10 Min.	20/ 40+1
19	20/ 40—2	5500 A. U.	.....	10 Min.	20/ 40+1
20	20/ 40	5500 A. U.	.....	10 Min.	20/ 30—2
21	20/ 40—1	5500 A. U.	.....	10 Min.	20/ 30—3
22	20/ 40—1	5500 A. U.	.....	10 Min.	20/ 30—3
23	20/ 40	5500 A. U.	.....	10 Min.	20/ 30—3
24	20/ 30—3	5500 A. U.	.....	10 Min.	20/ 30—3
25	20/ 30—2	5500 A. U.	.....	10 Min.	20/ 30—1
26	20/ 30—2	5500 A. U.	.....	10 Min.	20/ 30—2
27	20/ 40+2	5500 A. U.	.....	10 Min.	20/ 30—1
28	20/ 30—3	5500 A. U.	.....	10 Min.	20/ 30—2
29	20/ 30—3	6500 A. U.	.....	10 Min.	20/ 30—2
30	20/ 30	5500 A. U.	.....	10 Min.	20/ 30
31	20/ 30—2	6500 A. U.	.....	10 Min.	20/ 30—2
32	20/ 30—3	5500 A. U.	.....	10 Min.	20/ 30—3
33	20/ 30—1	6500 A. U.	.....	10 Min.	20/ 30—3
34	20/ 30—3	.....	Diathermy	25 Min.	.....
35	20/ 30—3	.....	Diathermy	25 Min.	.....
36	20/ 30—3	.....	Diathermy	20 Min.	.....
37	20/ 30—3	.....	Diathermy	30 Min.	.....
38	20/ 30—3	.....	Diathermy	30 Min.	.....
39	20/ 30—3	.....	Diathermy	30 Min.	.....
40	20/ 30—2	.....	High Frequency	30 Min.	.....
41	20/ 30—2	.....	Diathermy	30 Min.	.....
42	20/ 30—2	.....	High Frequency	30 Min.	.....
43	20/ 30—2	.....	Diathermy	30 Min.	.....
44	20/ 30—2	5500 A. U.	.....	7 Min.	20/ 30—2
45	20/ 30—2	.....	High Frequency	30 Min.	.....
46	20/ 30	.....	Diathermy	30 Min.	.....
47	20/ 30	.....	High Frequency	30 Min.	.....
48	20/ 30	6500 A. U.	.....	10 Min.	20/ 30—2
49	20/ 30	.....	Diathermy	30 Min.	.....
50	20/ 30—1	.....	High Frequency	30 Min.	.....
51	20/ 30—1	5500 A. U.	.....	10 Min.	20/ 30—1
52	20/ 30—1	.....	High Frequency	30 Min.	.....
53	20/ 30—1	.....	Diathermy	30 Min.	.....
54	20/ 30—2	4500 A. U.	.....	10 Min.	20/ 30—2
55	20/ 30—2	.....	Diathermy	30 Min.	.....
56	20/ 30—2	.....	High Frequency	30 Min.	.....
57	20/ 30—2	4500 A. U.	.....	10 Min.	20/ 30—2
58	20/ 30—2	.....	Diathermy	30 Min.	.....
59	20/ 30—2	.....	High Frequency	30 Min.	.....
60	20/ 30—2	4500 A. U.	.....	10 Min.	20/ 30—3
61	20/ 30—2	4500 A. U.	.....	10 Min.	20/ 30—2
62	20/ 30—2	.....	Diathermy	30 Min.	.....
63	20/ 30—2	4500 A. U.	.....	10 Min.	20/ 30—2
64	20/ 30—2	.....	Diathermy	30 Min.	.....
65	20/ 30—2	.....	High Frequency	30 Min.	.....
66	20/ 30—2	.....	High Frequency	30 Min.	.....

shorter light band and part of this improvement lasted until the next day when a treatment with a longer wave, namely the 6500 A. U. was applied. When we treated with this band, there was a drop in visual acuity after the treatment each day that this band was used as can be seen from curve B. The top line of this zig zag curve designates the visual acuity before treatment and the bottom the acuity after the treatment. This characteristic of the curve appears with constant regularity until the seventeenth treatment day when the use of the longer light band was discontinued and 5500 A. U. band was used exclusively for the next twelve consecutive treatments during which period he reached the maximum visual acuity, namely 20/30.

During the next five treatments (from the 29th to the 33rd treatment inclusive) we again tried to use the long and short light bands on alternate days but there was no perceptible change in his visual acuity—it remained 20/30. It appeared to us that we had reached a point where no more improvement could be made by using these light bands and we then decided to change our treatment modality completely and for the next 33 treatments we used daily High Frequency (monoterminal) and diathermy alternately with the exception that we used once the 6500 A. U. band, twice the 5500 A. U. and five times the 4500 A. U. band. There was no perceptible change in his visual acuity during this second stage of the treatment which extended over 33 treatment days, a period of time equal to the first stage during which all the improvement was obtained. As will be seen from the curves A and C, between the 33rd and the 66th treatment the curves appear much flattened out and the visual acuity remained at 20/30.

The ophthalmoscopic examination revealed that at the end of the 17th treatment period the lenticular opacity appeared less dense than when the treatments were first started. Two weeks later they appeared still less dense and we were then able to get a fair view of the fundus.

Case No. 4 is that of Mr. G. C., age 78. Visual acuity right eye without lenses was counting fingers at four feet and with —8.00 D. S.—3.50 D. Cyl Axis 165 V.A.=20/200. There was total blindness in the left eye. It was not possible to handle this case as the one described above. However, we found that at the end of the 27th treatment his visual acuity improved only to 20/70. We used here the same lens which formerly had given him a visual acuity of 20/200. Giving him thirteen more treatments did not further improve his vision. We then advised that treatments be discontinued.

Summary

1. A study of the application of the visible light band of the spectrum in the treatment of cataract brought to light some interesting facts. While this technique has not been applied to a sufficient number of cases to enable us to draw any definite conclusions, the findings to date justify the interest in further study and investigation of this subject

about which practically nothing is to be found in optometric or medical literature.

2. The longer spectral bands of about 6500 A. U. are not very effective when applied in the treatment of cataract and visual acuity is usually reduced after treating with this band.

3. The shorter spectral bands of about 5500 A. U. seem to be helpful when applied in the treatment of lenticular cataract cases with negative histories. The visual acuity seems to improve up to a certain point, which may be considered as the maximum for that case. When that point is once reached no further improvement will result from the application of either of the above mentioned bands. J. I. K.

BIBLIOGRAPHY

[1] M. Luchiech. Ultra Violet Radiations, p. 205.

[2] C. Sheard. The Ophthalmic Use of Crooks Lenses. Wellsworth Monthly pp. 7-11. 1922.

[3] W. Hoffman. Light Treatment in Tuberculosis of the Eye. Eye, Ear, Nose and Throat Monthly. p. 69. March, 1930.

[4] Elmer E. Hotaling and E. LeRoy Ryer. Observations on the Experiments being Conducted on the Value of Red-Free Lenses in Cataract Prophylaxis. American Journal of Optometry. Vo. 8., No. 4, pp. 131-136. 1931.

[5] Elmer E. Hotaling and E. LeRoy Ryer. Red-Free Glass in Certain Cataract Cases. Vol 5, American Academy of Optometry, pp. 80-88. 1931.

[6] O. J. Melvin. Cases of Cataract Treated with Calobar Glass Therapy. American Journal of Optometry. Vol. 7, No. 6, pp. 337-339. 1930.

[7] C. C. Koch. Invisible Radiant Energy as the Cause of Cataract. American Journal of Optometry. Vol. 7, No. 6, pp. 325-336. 1930.

[8] J. H. Kellog. Light Therapeutics. p. 48.

[9] T. H. Plank. Actinotherapy and Applied Physical Therapy. p. 67.

[10] J. I. Kurtz. The Principles and Practice of Ocular Physical Therapy, p. 174.

ANNOTATIONS
AND
SOCIETY PROCEEDINGS

The American Journal of Optometry is the Official Organ of the American Academy of Optometry, as well as the Organ of the Arkansas, Delaware, Indiana, Iowa, Maine, Maryland, Michigan, Minnesota, Nebraska, North Dakota, Oklahoma, Pennsylvania, South Dakota, Vermont and West Virginia Optometric Associations.

The following gentlemen have consented to supply items of interest from their respective sections, acting in the capacity of

ASSOCIATE STATE EDITORS

DR. E. B. ALEXANDER
Duncan, Okla.
DR. A. S. ANDERSON
Minot, N. D.
DR. J. F. ANDREAE
Baltimore, Md.
DR. O. E. BELL
Fairmont, W. Va.
DR. C. H. DEGRAFF
Monroe, Mich.
DR. L. P. FOLSOM
South Royalton, Vt.
DR. F. W. FREEMAN
Anderson, Ind.
DR. A. J. LARGE
Winona, Minn.
DR. J. J. LIVINGSTON
Little Rock, Ark.
DR. M. B. MEYER
Wilmington, Del.
DR. J. K. MORRIS
Erie, Penn.
DR. C. A. PERRIGO
Norfolk, Neb.
DR. D. E. PLAISTED
Lewiston, Me.
DR. H. N. SMITH
Sioux Falls, S. D.
DR. H. R. SPITLER
Eaton, Ohio
DR. A. P. WHEELOCK
Des Moines, Ia.

AN OBSOLETE IDEA

It is with no small sense of gratification that the writer notes the dying out of that old, but present day ridiculous optometric custom of mounting a painted eye, or a pair of eyes surrounded by an eye glass frame, somewhere about the premises of an optometric establishment. This eye or pair of eyes once seemed to hold an important place in the optometric scheme of things. To be sure, many years ago when a large portion of our population were foreign born who could read no English or who were illiterate, this sign was of some value, for it proclaimed to this group just what services might be expected within. Not only did the optometrist or rather the optician of that day display an eye but also the dentist displayed a large tooth, or worse still, a ferocious looking set of teeth, the jaws of which were somewhat set apart as though waiting to bite some unsuspecting person. The barber too had his varied-colored pole and the tobacco man his wooden Indian. These are now all relics of the past and as such are obsolete for the present day use. They are just as obsolete as the horse and surrey and these signs whenever seen are sure to provoke a smile and also the unconscious thought that modern change had left the proprietor of that place far, far behind. With the general high level of education today the use of such signs is preposterous. They are no longer

needed and when used stamp the user as an unprogressive individual who is still largely living in the past. C. C. K.

* * * * *

AN INSPIRATIONAL BOOK

For years the writer has made it a practice to read annually from cover to cover, that splendid inspirational work by Eugene Wiseman entitled *Building Optometry*. This book, published eleven years ago still ranks as the greatest stimulating force in the literature of the profession. It is a monumental work requiring rare courage and ideals to produce and showing clearly the splendid vision of the author, who during that trying period of the profession's development, a decade ago, was able to visualize and guide the way for professional advancement which he so clearly foresaw and in which he so splendidly lead the way.

The profession is everlastingly in debt to Wiseman for this great contribution to its development and advancement and every optometrist owes it to himself and to his profession to carefully review every chapter of this work. For those of my readers who now have this book let me urge you to get it out and read it again. For the younger men, who can no longer buy it as it is out of print, let me urge you to go to one of the older practitioners and borrow the book. By all means dig up a copy. It is worth any effort required to get it, as you will receive from the reading of it the broad inspirational outlook so necessary in starting a professional career.

As the years roll on we appreciate more and more the sacrifices made for optometry by the great leaders of the profession of which Wiseman is one of the foremost, and this perspective also enables us to more fully appreciate the splendid writings of these leaders among which the book, *Building Optometry* takes a prominent place. C. C. K.

* * * * *

NEW YORK STATE BOARD INSTRUCTIONS

It is encouraging to note the new aggressive stand the New York State Board of Optometry has taken with reference to many of the commercial tactics employed by some New York optometrists. The Board of Regents, through the Optometry Board is evidentally tired of the shyster-like nonsense fostered upon the public by these commercially minded optometrists and is now definitely instructing the optometry inspectors to "lay down the law" to this group of wrongdoers. It is high time this were done and the board's action now sets a splendid example for other states to follow.

GRADUATE CLINIC IN CHICAGO

A Skeffington Graduate Clinic is announced for the three-day period beginning October 12th in Chicago at the Palmer House. Special rooms are being fitted up and plans are being laid for an extensive clinic. The sessions will be conducted by Dr. H. E. Pine and Dr. A. M. Skeffington, and will be held in both the morning and the evening of each day.

* * * * *

OPTOMETRIC WORK IN HOSPITALS

Dr. Harry E. Pine, 901 Willoughby Tower, 8 South Michigan avenue, Chicago, Ill., is desirous of communicating with all optometrists who are connected with hospitals in the capacity of refractionists. Dr. Pine is President of the Illinois State Society of Optometrists and wishes to compile data on this subject for future use in the city of Chicago. All such men are urged to send their name, the name of the hospital and its locality to him at once.

* * * * *

NORTHERN ILLINOIS COLLEGE

The announcement has been made by Dean Needles of the Northern Illinois College of Optometry that starting in the fall of 1933 no students will be registered for less than three full years of resident work at the college. In addition to this the announcement is made of a large addition which has been added to the College Eye Clinic which is now handling in excess of 80 cases each day. These cases are referred to the Clinic by the Cook County Bureau of Public Welfare and receive whatever care and attention is necessary, the work being done under the supervision of the schools large clinical staff of optometrists and physicians who are assisted by senior students.

* * * * *

GRADUATE CLINIC IN MINNEAPOLIS

The Minneapolis Graduate Clinic group held its first fall meeting in September. Dr. R. E. Peterson presided and introduced Dr. Walter H. Nordin, optometrist of Austin, Minn., who was the guest speaker. The second meeting held early in October was presided over by Dr. Rodger Lindquist who introduced Dr. C. C. Koch who spoke on Case History Analysis.

* * * * *

NEW YORK OPTOMETRIC ASSOCIATION

Drs. Cohen, Feinbloom and Bohall comprise a committee on arrangements for one day Regional meetings to be held under the auspices of the New York Optometric Association throughout the state. These men suggest the following plan, each portion of which will be conducted by an optometric speaker fully conversant with the subject.

AFTERNOON SESSION

Symposium on Latent Hyperopia

(a) The case history in Latent Hyperopia. Discussion.

(b) The retinoscopic picture in Latent Hyperopia and its interpretation.
1. The Graduate Clinic "Type C" case.
2. The Peckham Base-in Technique. Discussion.

(c) The subjective examination in Latent Hyperopia.
1. Variations of the fogging test.
2. Cyclodamia—an ophthalmologist's suggestion for non-cyclopegic refraction. Discussion.

(d) The effect of Latent Hyperopia on the phoria and duction findings. Discussion.

(e) The Near Point Cross Cylinder Findings in Latent Hyperopia. Discussion.

(f) A brief discussion of the application of the blur point technique to Latent Hyperopic cases.

EVENING SESSION

Symposium on Convergence Insufficiency

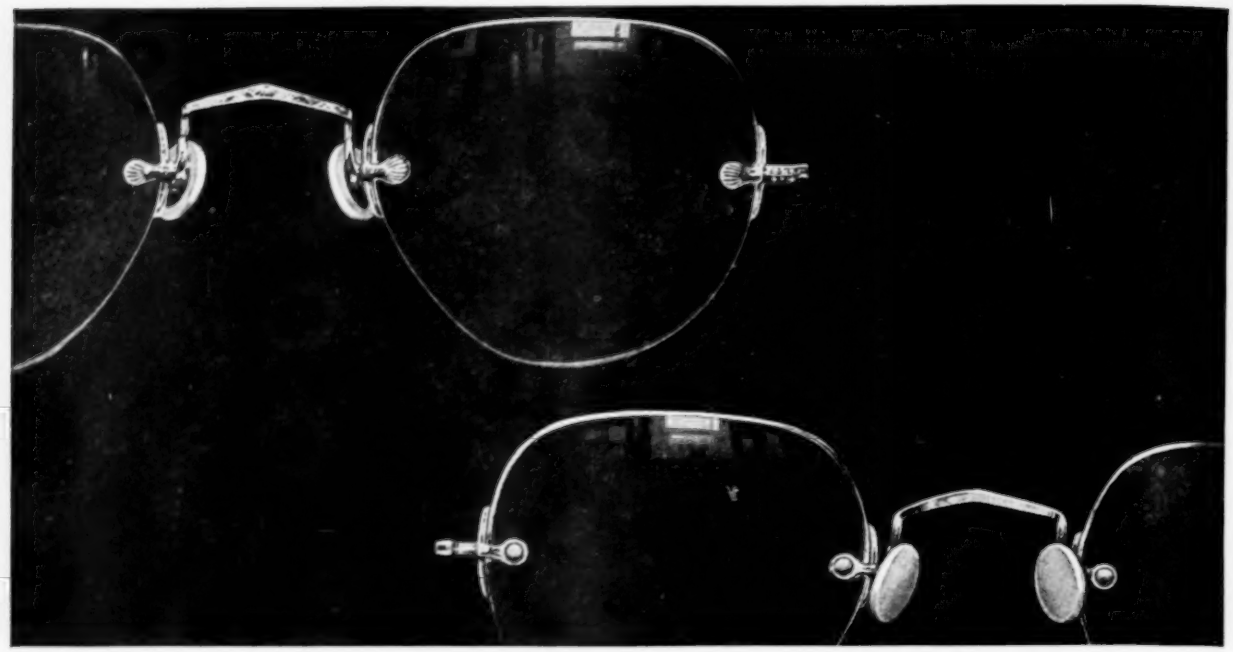
(a) The symptomatology of Convergency Insufficiency. Discussion.

(b) The relationship of Convergence Insufficiency to general systemic pathology. Discussion.

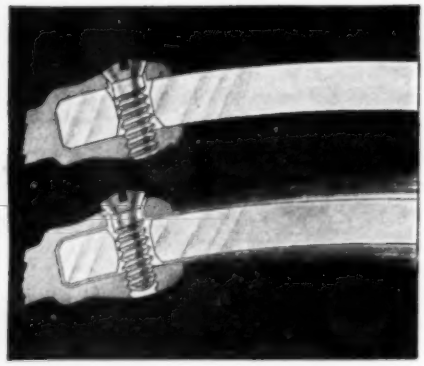
(c) The relationship of Convergence Insufficiency to anomolies of refraction. Discussion.

(d) The treatment of Convergency Insufficiency. Discussion.

These meetings should be of great interest and a very large attendance is looked for.



The Pelham bridge with Loxit and Bal-Guards.* Top, front view, showing strap as attractive ornament. Lower, back view of Loxit.



A NEW, EXCLUSIVE B & L METHOD OF PERMANENTLY MOUNTING LENSES

ILLUSTRATION, top left, shows how poorly the old style screw fits into the drilled lens. If tight it may strain or even crack the lens. The inevitable twisting which a lens gets in use, frequently loosens the screw—causing a "wobbly" lens.

Lower, Loxit in cross section. Showing how the plastic rivet fills every crevice in lens hole and strap—locking lens securely into strap.

*Patented and exclusive to B & L products.

BAUSCH & LOMB